

Claims

- [c1] A composition for use in an oil chamber of a tool, comprising:
 - a hydraulic oil; and
 - a surfactant, wherein the surfactant is present at an amount sufficient to form micelles in the hydraulic oil.
- [c2] The composition of claim 1, further comprising an amphiphilic copolymer.
- [c3] The composition of claim 1, wherein the surfactant comprises at least 1% by volume of the composition.
- [c4] The composition of claim 1, wherein the surfactant comprises at least 10% by volume of the composition.
- [c5] The composition of claim 1, wherein the surfactant is a non-ionic surfactant.
- [c6] The composition of claim 5, wherein the non-ionic surfactant is one selected from the group consisting of polyoxyethylenated alkylphenols, polyoxyethylenated alcohols, polyoxyethylenated polyoxypropylene glycols, polyoxyethylenated mercaptans, and long chain carboxylic acid esters.

- [c7] The composition of claim 1, wherein the surfactant is an ionic surfactant.
- [c8] The composition of claim 7, wherein the ionic surfactant is one selected from the group consisting of sodium bis(2-ethylhexyl) sulfosuccinate (AOT), didodecyldimethylammonium bromide (DDAB), dodecyltrimethyl ammonium bromide (DTAB), and sodium dodecyl sulfate (SDS).
- [c9] A tool, comprising:
 - a hydraulic chamber; and
 - a hydraulic fluid enclosed in the hydraulic chamber, wherein the hydraulic fluid comprises a hydraulic oil and a surfactant, wherein the surfactant is present at an amount sufficient to form micelles in the hydraulic oil.
- [c10] The tool of claim 9, wherein the hydraulic fluid further comprising an amphiphilic copolymer.
- [c11] The tool of claim 9, wherein the tool is a downhole tool.
- [c12] The tool of claim 9, wherein the downhole tool is one selected from a formation fluid tester, a downhole logging tool, a downhole sensor, a downhole tractor, an offshore seismic sensor, a submerged monitor and sensor system.
- [c13] A method for protecting a tool, comprising:

providing a hydraulic fluid composition comprising a hydraulic oil and a surfactant capable of forming micelles in the hydraulic oil; and
filling a hydraulic chamber in the tool with the hydraulic fluid composition.

[c14] The method of claim 13, wherein the tool is a downhole tool.

[c15] The method of claim 14, wherein the downhole tool is one selected from the group consisting of a formation fluid tester, a downhole tractor, a downhole logging tool, and a downhole sensor.